UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/518,253	12/16/2004	Estelle Lesellier	FR 020062	8258

24737 7590 03/05/2008

PHILIPS INTELLECTUAL PROPERTY & STANDARDS
P.O. BOX 3001
BRIARCLIFF MANOR, NY 10510

EXAMINER	
THOMAS, MIA M	

ART UNIT	PAPER NUMBER
2624	

MAIL DATE	DELIVERY MODE
03/05/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/518,253	LESELLIER, ESTELLE	
	Examiner	Art Unit	
	MIA M. THOMAS	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 December 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 December 2007* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This Office Action is responsive to the applicant's remarks received on 14 December 2007. Claims 1-9 are pending in the application.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-3, 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Drouot et al. (WO 01/120912 A1) in combination with Mancuso et al. (US 6,285,801 B1).

Regarding Claim 1: (Currently Amended)

Drouot discloses a method of processing data corresponding to pixels of a sequence of digital images so as to detect a grid corresponding to blocking artifacts (Refer to Figure 3 and Figure 1) comprising:

a step of high-pass filtering a portion of a digital image, to supply at least one set of discontinuity pixels (Refer to Figure 1, Element GF and further page 4, lines 8-10)

detecting blocking artifacts from the at least one set of discontinuity pixels (Refer to Figure 1, Element CALC and further at page 4, lines 29-30),

Drouot does not specifically disclose searching rows within the portion for, a grid row having a density of blocking artifacts that is substantially larger than that of its neighboring rows.

Mancuso teaches searching, within said portion (Refer to Figure 1, numeral 104, further at column 3, line 12), a set of grid rows (Refer to Figure 2), a grid row having a density of blocking artifacts which is *substantially larger than* that of its neighboring rows (For example, see Figure 4, further at column 5, line 8).

Drouot and Mancuso are combinable because they are in the same field of signal processing and filtering noise such as blocking artifacts in digital images (see title of each invention).

At the time that the invention was made, it would have been obvious to one of ordinary skill in the art to characterize a step of searching, within said portion a set of grid rows a grid row having a density of blocking artifacts which is *substantially larger than* that of its neighboring rows.

The suggestion/motivation for combining the disclosure of Drouot with the teaching of Mancuso would have been to because "the image can be scanned sequentially row-by row (or line by line) as a stream of pixels into the filter." at column 2, line 65 (Mancuso). The searching capabilities of the Global Metrics Extractor (numeral 104) would allow a more efficient search of the grid rows and streaming of the pixels into the filter.

Therefore, it would have been obvious to one of ordinary skill in the art to combine the disclosure of Drouot with the teachings of Mancuso to obtain the invention as specified in Claim 1.

Regarding Claim 2: (Currently Amended)

Mancuso teaches wherein the searching includes:

selecting, in a row of the portion of the image, segments comprising a number of consecutive blocking artifacts that is larger than a predetermined first threshold (Refer to Figure 3, numeral 304(processing window). For clarity, ("FIG. 3 illustrates one image block 202 partitioned into several pixels, wherein a pixel is designated by 302. A target pixel 302i, i.e., the pixel to be processed using the filter 100, and neighboring pixels are defined by a sub-block of the image 100, called a processing window 304." at column 4, line 4); Another example would be at Figure 4, numeral 404;

computing a blocking artifact level per row on the basis of values of pixels of the selected segments ("Recall that depending on the compression ratio used in the images the effects of block coding the image become visible around the block boundaries. When the image signal is encoded in intra-field mode, the macro-block will contain pixels belonging to only one field, and the blocking artifact will affect the border of an 8*8 pixel sub-block." at column 6, line 4; further at Figure 12); Specifically, Figure 4, numeral 402 is a "processing window in which the blocking artifacts may become visible at numeral 404, or at numeral 504 (Figure 5)." at column 4, line 62).

determining a grid row on the basis of a comparison of the blocking artifact levels of a current row and a set of neighboring rows (Refer to Figures 5, numerals 506 and 504).

Regarding Claim 3: Drouot discloses measuring the image quality, by adding the blocking artifact levels of the different rows of the grid for the portion of the image (Refer to page 2, lines 3-9).

Regarding Claim 5: Drouot discloses wherein the high-pass filtering supplies two sets of discontinuity pixels, one horizontal set and one vertical set (Refer to page 4, lines 8- 10).

Regarding Claim 6: Drouot discloses wherein detecting the blocking artifacts includes detecting a first type of blocking artifacts and a second type of blocking artifacts from the at least one set of discontinuity pixels (Refer to page 5, line 22).

Regarding Claim 7: Drouot discloses correcting the blocking artifacts situated in the grid rows in accordance with their type (p1, p2) (Refer to Fig 1 Element PP, page 4 lines 31 through page 5 lines 1-2 and Page 2 Lines 22-28).

Regarding Claim 8: Drouot discloses a television receiver comprising a processing device using the data processing method as claimed in claim 7, for detecting the grid rows within a sequence of digital images, correcting the blocking artifacts situated in said rows, and displaying corrected digital images on a screen of said receiver (Refer to Figure 1 and Figure 3, also refer to page 2, lines 19-20 and 30-31).

Regarding Claim 9: Drou ot discloses a computer medium that includes program product comprising a set of instructions which, when loaded into a circuit, cause said circuit to perform

the method of processing digital images as claimed in claim 1 (Refer to Figures 1 and 3, also refer to Claims 11 and 12 at page 12, lines 21-27).

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Drouot et al. (WO 01/120912 A1) in combination with Mancuso et al. (US 6,285,801 B1) as applied to claim rejections above, and further in view of Jung et al. (US 6,822,675 B2).

Regarding Claim 4:

Drouot and Mancuso disclosed all the claimed elements as listed above.

Drouot and Mancuso does not specifically disclose validating *to* determine whether a grid is present within the portion of the digital image if the number of grid rows found in said portion is higher than a second predetermined threshold.

Jung teaches validating *to* determine whether a grid is present within the portion of the digital image if the number of grid rows found in said portion is higher than a second predetermined threshold ("A corner outlier is detected by taking into account: an absolute luminance difference between a candidate corner pixel and the average of the group of four neighboring corner pixels to which it belongs, a perceptual visibility of that difference given the local average luminance, a probability that the candidate pixel is a natural pixel simply aligned with the grid. Verification of corner outlier metric performance is straightforward, as corner outliers are usually few and highly visible. Further at column 7, lines 60-67 and column 8, lines 1-13 for more detailed explanations of the step of validation).

Drouot, Mancuso and Jung are combinable because they are in the same field of blocking artifacts in digital videos and digital video image quality. (See title of each invention).

At the time that the invention was made, it would have been obvious to one of ordinary skill in the art to perform validati[ion] *to* determine whether a grid is present within the portion of the digital image if the number of grid rows found in said portion is higher than a second predetermined threshold.

The suggestion/motivation for this combination would have been to provide a precise metric and also a false detection rate which is analogous with the blocking artifacts. The efficiency and effectiveness of this validation is greatly affected and thus the validation step as taught by Jung is necessary for the best method for carrying out the specifics of this manipulation of the video image elements.

Therefore, it would have been obvious to one of ordinary skill in the art to combine the disclosure of the combination of Drouot and Mancuso with the teachings of Jung to obtain the specified invention of Claim 4.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 9 recites the limitation "computer medium" at line 9. There is insufficient antecedent basis for this limitation in the claim. The specification of this instant application is not supported by the term "computer medium".

Claim Rejections - 35 USC § 101

7. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

> Claims that recite nothing but the physical characteristics of a form of energy, such as a frequency, voltage, or the strength of a magnetic field, define energy or magnetism, per se, and as such are nonstatutory natural phenomena. O'Reilly, 56 U.S. (15 How.) at 112-14. Moreover, it does not appear that a claim reciting a signal encoded with functional descriptive material falls within any of the categories of patentable subject matter set forth in Sec. 101.
>
> ... a signal does not fall within one of the four statutory classes of Sec. 101.
>
> ... signal claims are ineligible for patent protection because they do not fall within any of the four statutory classes of Sec. 101.

8. Claim 9 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claim 9 defines a "data carrier", for example a disc and a "form of a downloadable signal" with descriptive material. While "functional descriptive material" may be claimed as a statutory product (i.e., a "manufacture") when embodied on a tangible computer readable medium, a "data carrier" embodying that same functional descriptive material is neither a process (i.e., a series of steps per se.) nor a product (i.e., a tangible "thing") and therefore does not fall within one of the four statutory classes of § 101. Rather, "signal" is a form of energy, in the absence of any physical structure or tangible material.

Response to Arguments

7. The amendments filed on 14 December 2007 have been fully considered. A complete response to these amendments is provided below.

Summary of Remarks/Discussion of Issues:

A. Abstract

The abstract has been rewritten to conform to U.S. patent practice. Examiner accepts this amendment and is entered herewith this response.

B. Claims

Claims are amended for non-statutory reasons... The claims are not narrowed in scope and no new matter is added. Examiner accepts this amendment.

C. Claim Rejections-U.S.C. 112, Second Paragraph

Applicant's arguments, see page 6 of 9, filed 12/14/07, with respect to Claim Rejections have been fully considered and are persuasive. The rejection of claims 1, 5, 6, and 8 has been withdrawn.

D. Claim Rejections-U.S.C. 103

Summary of Remarks/Discussion of Issues: Claims 1-6 are rejected under 103(a) over Lee (6259823) and Nio et. al (6795588). The applicant respectfully traverses this rejection.

The combination of Lee and Nio fails to teach detecting a grid of blocking artifacts by searching a set of grid rows within a portion of a digital image for a grid row having a density of blocking artifacts that is substantially larger than that of its neighboring rows. Lee does not detect a grid corresponding to blocking artifacts, and specifically does not search for corresponding grid

rows, and does not identify such grid rows by comparing the density of blocking artifacts in the rows.

Examiner's Response: The arguments are moot in view of new grounds of rejection. Examiner has relied upon the disclosure of Drouot in combination with Mancuso. Further claim 4 is rejected by the combination of Drouot and Mancuso and further in view of Jung. (See new claim rejections above).

Summary of Remarks/Discussion of Issues: Claims 6-8 are rejected under Lee, Nio and Inoue (6,172,770). As noted above, the combination of Lee and Nio fails to teach the elements of Claim 1. Accordingly, the rejection should be withdrawn.

Examiner's Response: The Examiner has changed the grounds of rejections based upon a new prior art reference, these arguments are moot. Newly rejected claims 6-8 are now rejected based upon Drouot and Mancuso.

E. Claim Rejections-U.S.C. 101

Summary of Remarks/Discussion of Issues: Claim 9 is rejected under 35 U.S.C. 101 for failing to recite a computer readable medium; claim 9 is correspondingly amended herein.

Examiner's Response: Examiner disagrees. The newly amended claim now recites claim language which is not supported by the specification. As currently amended, the medium could be the "downloadable signal" recited at page 9, lines 23 or the "data carrier, for example a disc"

recited at page 9, line 20. As presented the claim in non-statutory for the aforementioned reasons listed above.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

USP---7162099 **USP---7031392** **USP---6859558**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MIA M. THOMAS whose telephone number is (571)270-1583. The examiner can normally be reached on Monday-Thursday 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vikkram Bali can be reached on 571-272-7415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mia M Thomas/
Examiner
Art Unit 2624

VIKKRAM BALI
PRIMARY EXAMINER